

BOOK REVIEWS

LAWRENCE E. ESTAVILLE AND RICHARD A. EARL. 2008. **Texas Water Atlas**. (ISBN 978-1-60344-020-2, flexbound with flaps). Texas A&M University Press, John H. Lindsey Building, 4354 TAMU, College Station, Texas 77843-4354, U.S.A. (**Orders:** www.tamu.edu/upress, 1-800-826-8911). \$24.95, 152 pp., 94 color maps, 17 color photos, 3 tables, 9 graphs, 1 appendix, bibl., index, 8 5/8" × 11 1/4".

Lawrence E. Estaville and Richard A. Earl have compiled and compared geologic, environmental, water and weather data, population and human activity to graphically illustrate Texas' rocky relationship with water in this image-packed reference work, *Texas Water Atlas*. From water demand projections to locations of fish kills and agricultural pollutants to scuba parks and tubing access, no topic is sacred or unexplored. Each chapter is introduced with an easy to understand historic overview based on rigorous scholarship by the authors, both professors of geography. The book, sponsored by the River Systems Institute at Texas State University, is unique. Drawing data from a wide range of authoritative resources, the work provides analysis in context in regard to the numerous variables that impact Texas water supply, usage and quality. *Texas Water Atlas* is a valuable resource for professionals and policy makers in a variety of fields, educators and the lay person.—Becky Brandenburg, Volunteer, Botanical Research Institute of Texas, Fort Worth, Texas 76102-4025, U.S.A.

JOHN TYLER BONNER. 2009. **The Social Amoebae: The Biology of Cellular Slime Molds**. (ISBN 978-0-691-13939-5, hbk: alk. paper). Princeton University Press: 41 William Street, Princeton, New Jersey 08540-5237, U.S.A. (**Orders:** <http://press.princeton.edu>, 1-800-777-4726, 1-800-999-1958 fax, 1-609-258-6305 overseas fax OR orders@cpfsinc.com, California-Princeton Fulfillment Services, 1445 Lower Ferry Road, Ewing, New Jersey 08618, U.S.A.). \$19.95, 156 pp., 34 b&w line illustrations, 5 1/2" × 8 1/2".

John Tyler Bonner has spent more than 60 years of study devoted to the biology of the cellular slime molds. His 18 previous books interpret and explain experimental data, beginning in 1959 with his First Edition of *The Cellular Slime Molds*, which was not intended to be taxonomic with descriptive lists of species, but emphasized the unique biology of the life cycle as an experimental model. Bonner states his goal in this current book, "This book is not an encyclopedia, a textbook, or a monograph, it covers only a fraction of all we know about slime molds. Rather, it is an essay on the big lessons we have learned, with a few unconventional and new insights." And in addition, the narrative is "... aimed at the curious layperson ..." and in this Bonner excels as a master at explaining complex biological concepts and experimental data now laced with molecular biology and genetics. A more general readership will appreciate and understand the contents of this book because of Bonner's engaging writing style.

Eight topical headings are represented by an Introduction, The Life Cycle, Evolution, Ecology, Behavior of Amoebae and Cell Masses, Morphogenesis, Differentiation, and The Future. These sections are rather short, varying from 5 to 16 pages in length. The Evolution section makes for fascinating reading, especially the recent molecular analysis using SSU rDNA that separates the dictyostelids into four groups as shown on a phylogram. There is not enough space here to describe all of the details in this section, but the phenotypes of chimaeras, heterokaryons, and heterocytos deserve special mention. There is one incredible vignette entitled "Slime Mold Aggression" that describes the discovery of a cellular slime mold in a bat cave that produces a chemical killer compound that destroys and engulfs other amoebae species and eventually fruits and apparently represents a new distinct species. In the Ecology topic there is a section on "Latitudinal Diversity" where species diversity in the warmer tropics is higher and is lower at higher cooler latitudes in the tropics or lower going toward the poles, and this pattern of species diversity follows the same trend in flowering plants. The role of cyclic AMP in the gathering and aggregation of the amoebae is the classic example of chemotactic response and hence the "social amoebae."

This book is not a comprehensive review of dictyostelid biology, but the selected topics are intriguing and simply explained. The Bibliography also is highly selective, and the 10 pages and 125 references are sprinkled with older and newer references. If I had to select a first book on the biology of the cellular slime molds that is readable by the layperson and various age groups from high school to university, this would be the book to pique anyone's interest in this fascinating group of organisms.—Harold W. Keller, Research Associate, Botanical Research Institute of Texas, Fort Worth, Texas 76102-4025, U.S.A.